

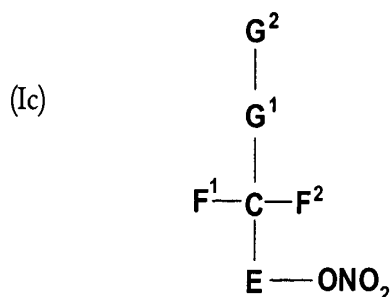
and which may contain inorganic counterions, but is not a nitrate group; E is a methylene group and G¹ is a methylene group or does not exist; F¹ is H; and G² is R^N.Z^N;

wherein R^N is an organic radical possessing a heteroaryl group containing P or S atoms where said P or S are positioned β, γ, or δ to a nitrate group as identified in formula Ia; and Z^N is W^N_{mm}-X^N_{nn}-Y^N_{oo};

wherein mm, nn, oo are 0 or 1 and W^N, X^N, Y^N are NH, NR^{NN}, CO, O or CH₂;

wherein R^{NN} is a C₁ - C₁₂ alkyl group.

13. (Twice amended) A method for providing sedation, mitigating anxiety or providing anaesthesia in a subject in need thereof, comprising administering to a subject an effective amount of a therapeutic compound, wherein the therapeutic compound is of the formula (Ic):



in which E is (R¹R²C)_m and G²-G¹-CF¹F²- is R¹⁹-(R³R⁴C)_p-(R¹⁷R¹⁸C)_n-;

wherein: m, n, p are integers from 0 to 10;

R^{3,17} are each independently hydrogen, a nitrate group, or A; and

R^{1,4} are each independently hydrogen, or A;

where A is selected from a substituted or unsubstituted aliphatic group comprising a branched or straight-chain aliphatic moiety having from 1 to 24 carbon atoms in the chain, which optionally may contain O, S, NR⁶ and unsaturations in the chain, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; an unsubstituted or substituted cyclic aliphatic moiety having from 3 to 7 carbon atoms in the aliphatic ring, which optionally may contain O, S, NR⁶ and unsaturations in the ring, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; an unsubstituted or substituted aliphatic moiety constituting a linkage of from 0 to 5 carbons, between R¹ and R³ and/or between R¹⁷ and R⁴, which optionally may contain O, S, NR⁶ and unsaturations in the linkage, and optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; a substituted or unsubstituted aliphatic group comprising a branched,

cyclic or straight-chain aliphatic moiety having from 1 to 24 carbon atoms in the chain, containing carbonyl linkages selected from the group consisting of C=O, C=S, and C=NOH, which optionally may contain O, S, NR⁶ and unsaturations in the chain, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; a substituted or unsubstituted aryl group; a heterocyclic group; an amino group selected from alkylamino, dialkylamino, cyclic amino, diamino and triamino moieties, arylamino, diarylamino, and alkylarylamino; hydroxy; alkoxy; a substituted or unsubstituted aryloxy;

wherein X is F, Br, Cl, NO₂, CH₂, CF₂, O, NH, NMe, CN, NHOH, N₂H₃, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₂HM, PO₃HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O), C(O)R¹², C(O)(OR¹³), PO₂H, PO₂M, P(O)(OR¹⁴), P(O)(R¹³), SO, SO₂, C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵;

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Y is F, Br, Cl, CH₃, CF₂H, CF₃, OH, NH₂, NHR⁶, NR⁶R⁷, CN, NHOH, N₂H₃, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₂HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O)R¹², C(O)(OR¹³), C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵, or does not exist;

R², R⁵, R¹⁸, R¹⁹ are optionally hydrogen, A or X-Y;

R⁶, R⁷, R⁸, R⁹, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ are the same or different alkyl or acyl groups containing 1-24 carbon atoms which may contain 1-4 ONO₂ substituents; or C₁ - C₆ connections to R¹ - R⁴ in cyclic derivatives which may contain 1-4 ONO₂ substituents; or are each independently hydrogen, a nitrate group or A;

M is H, Na⁺, K⁺, NH₄⁺, N⁺H_kR¹¹(_{4-k}) where k is 0-3; or other pharmaceutically acceptable counterion;

and with the proviso that when m = n = p = 1 and R¹⁹, R², R¹⁸, R¹ = H and R¹⁷, R³ are nitrate groups, R⁴ is not H.

14. (Twice amended) The method of claim 11, wherein F² is a nitrate group; and E, F¹, G¹, G² are the same or different organic radicals which may be joined in cyclic ring systems, and which may contain inorganic counterions;

with the proviso that when E and G¹ are methylene groups and F¹ is H, G² is not a nitrate group, nor R^N.Z^N;

wherein R^N is any aryl or heteroaryl group and Z^N is $(CO)_{mm}X^N_{nn}Y^N_{oo}$;

wherein mm, nn, oo are 0 or 1 and X^N, Y^N are NH , NR^{NN} , O or CH_2 ;

wherein R^{NN} is a $C_1 - C_{12}$ alkyl group.

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15. (Amended) The method of claim 11, wherein F^2 is a nitrate group; E and G^1 are methylene groups; F^1 is H; and G^2 is R^N-Z^N ;

wherein R^N is an organic radical possessing an heteroaryl group containing P or S atoms where said P or S are positioned β , γ , or δ to a nitrate group as identified in formula Ia; and

Z^N is $W^N_{mm}X^N_{nn}Y^N_{oo}$;

wherein mm, nn, oo are 0 or 1 and W^N, X^N, Y^N are NH , NR^{NN} , CO, O or CH_2 ;

wherein R^{NN} is a $C_1 - C_{12}$ alkyl group.

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24. (Amended) The method of any one of claims 11, 13, 14 or 15, further comprising administering the therapeutic compound with a pharmaceutically acceptable vehicle.

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26. (Amended) The method of any one of claims 11, 13, 14 or 15, wherein the therapeutic compound modulates levels of the cyclic nucleotides cGMP and/or cAMP in said subject.

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28. (Amended) The method of any one of claims 11, 13, 14 or 15, wherein the therapeutic compound modulates guanylyl cyclase activity in said subject.

41. (Amended) The method of claim 13, wherein when E and G^1 are independently methylene groups or do not exist and F^1 is H, G^2 is not R^N-Z^N ;

wherein R^N is any aryl or heteroaryl group and Z^N is $(CO)_{mm}X^N_{nn}Y^N_{oo}$;

wherein mm, nn, oo are 0 or 1 and X^N, Y^N are NH , NR^{NN} , O or CH_2 ;

wherein R^{NN} is a $C_1 - C_{12}$ alkyl group.

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42. (Amended) The method of claim 41, wherein F^2 is a nitrate group; and E, F^1 , G^1 , G^2 are the same or different organic radicals which may be joined in cyclic ring systems, and which may contain inorganic counterions;

with the proviso that when E and G^1 are methylene groups and F^1 is H, G^2 is not a nitrate group, nor R^N-Z^N ;